AMENDMENTS TO THE DRAWINGS:

Please find accompanying this response replacement sheets for Figs. 4A, 11 and 12 wherein amendments explained in the Remarks presented below are effected.

REMARKS

Claims 1 and 3-11 remain pending in this application. Claims 1, 2 and 5-13 are rejected. Claims 3 and 4 are objected to. Claim 2 is cancelled herein. Claims 1 and 3-11 are amended herein to clarify the invention, to express the invention in alternative wording, to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues.

Applicants herein traverse and respectfully request reconsideration of the rejection of the claims and objection cited in the above-referenced Office Action.

The drawings are objected to. The Office Action states that the legend "Prior Art" is required on Figs. 11 and 12 to clarify the invention. Replacement sheets including Figs. 11 and 12 accompany this amendment wherein the legend "Prior Art" is added. Additionally, applicants noticed that the reference designator 24b is used to identify two different elements in Fig. 4A. A replacement sheet including revised Fig. 4A also accompanies this amendment, in which one of the elements formerly identified as 24b is now correctly identified by the reference designator 24a. Withdrawal of the drawing objections is earnestly solicited.

Claims 8-13 are rejected as indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention as a result of informalities stated in the Office Action. The claims are amended to remove or correct the informalities noted in the Office Action. In particular, the claims are amended to stand in proper functional method claim form.

Therefore, reconsideration of the rejection of claims 8-13 and their allowance are earnestly requested.

Claims 1, 2 and 5-7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dolan et al. (US 6,136,182). Applicants herein respectfully traverse these rejections. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" ***Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.***, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). It is respectfully submitted that the cited reference is deficient with regard to the following.

Independent claim 1 recites in pertinent part the following:

> a microscopic liquid channel disposed on the substrate, the liquid channel being formed by a magnetic barrier which is generated by the ferromagnetic track and by applying a magnetic field, the liquid channel being adapted to pass a liquid having magnetism introduced from the introduction zone

In accordance with claim 1, a microscopic liquid channel is formed by a magnetic barrier, and is not a physical groove or a vessel, but rather is a structure

without walls, other than on the bottom face (See, for example, Fig. 5A-C of the present invention). In Figs. 4A and B, the elements identified by reference numerals 24a, 24b and 28a,28b are not solid walls, but rather magnetic barriers. Thus, because there are no walls other than on the bottom face, it is possible to optionally make use of the surrounding fluid, as in claims 3 and 4 of the present invention.

In stark contrast to the above approach, Dolan is directed to a vessel which is enclosed by a solid walls. In the Office Action, the Examiner indicates the part identified by reference numeral 20 in Figs. 5A and B and numeral 218 in Fig. 12 in Dolan as corresponding to the channel in the present invention, but these are actual magnets, and not channels formed by the magnetic barrier in the context of the claimed invention of claim 1.

In the a microscopic liquid channel of the present invention, the liquid channel is adapted to pass a liquid having magnetism introduced from the introduction zone. As such, a liquid having magnetic properties passes through the channel. In direct opposition, Dolan teaches that the magnetic matter in the liquid is captured by a ferromagnetic capture structure 218.

The Examiner is of the opinion that because a mixing effect is also provided by the Dolan reference, this is the same as the present invention. However, in Dolan, the magnets do not contribute to mixing, but rather contribute only to capture. Mixing is performed by way of a mixing valve 218 (Fig. 12), and thus the ways in

which the magnets are used are completely different form the claimed invention of claim 1.

In view of the above, it is respectfully submitted that claims 1, 2 and 5-7 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 1, 2 and 5-7 and their allowance are respectfully requested.

Claims 8-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Young, Jr. et al. (US 5,332,487). Applicants herein respectfully traverse these rejections.

Independent claim 8 recites in pertinent part the following:

> bringing into contact with a solid, an outside of a liquid channel formed by a magnetic barrier which is generated by a ferromagnetic track arranged on or embedded inside a substrate and by applying magnetic field; and
>
> plating a pattern along the liquid channel to the solid by a magnetic plating solution introduced from an introduction zone and flowing in the liquid channel

In accordance with independent claim 8, the electrolytic plating solution flows through the micro-channel and plating is performed along this flow. Therefore the magnetic channel constitutes a plating bath, and not a tank. In contrast thereto, as stated in Young, Jr. et al., "The pallet 22, with the disk substrates 26, are next transported to the station 16. The plating station 16 consists of a tank in which is mounted a plating cell 62" (see column 7, lines 42-46). Accordingly, the electrolytic solution is present in the plating cell in the tank 16, and does not flow.

A comparison, for example, of the principle of the present invention in Fig. 4 with that of Fig. 9 in Young, Jr. et al., it is readily apparent that the ferromagnetic track of the present invention (22; 26a, 26b) is completely different from the arrangement of magnets in Young, and the orientation of the magnetic field B_0 (21) is also completely different.

In view of the above, it is respectfully submitted that claims 8- 9 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 8-9 and their allowance are respectfully requested.

Claim 11 is rejected under 35 U.S.C. § 102(b) as being anticipated by Kinoshita (US 4,842,707). Applicants herein respectfully traverse these rejections.

Claim 11 recites in pertinent part the following:

bringing into contact with a solid, an outside of a liquid channel formed by a magnetic barrier which is generated by a ferromagnetic track arranged on or embedded inside a substrate and by applying magnetic field; and

etching a pattern along the liquid channel to the solid by corrosive reaction or electrolysis of a magnetic liquid introduced from a liquid introduction zone and flowing in the liquid channel

According to the recited language of claim 11, the corrosive liquid flows through the micro-channel, and etching is performed along this flow. As opposed to this, Kinoshita is directed at a dry process, and etching is not performed along the flow of a corrosive liquid (See, for example, abstract, Fig. 1a, and Fig. 1b).

The present invention according to claim 11 is one wherein a liquid is caused to flow along a micro-channel and a micro-pattern is etched, which contributes to pollution control by reducing the amount of corrosive liquid used. In contrast, Kinoshita is directed at etching by a dry process, and cannot etch a micro-pattern.

In view of the above, it is respectfully submitted that claim 11 particularly describes and distinctly claims elements not disclosed in the cited reference.

Therefore, reconsideration of the rejections of claim 11 and its allowance are respectfully requested.

Claim 13 is rejected under 35 U.S.C. § 102(b) as being anticipated by R.A. Shaffer et al. (US 3,002,847). Claim 12 is rejected as obvious over Young, Jr. et al. in view of Dolan et al. under 35 U.S.C. §103(a). The cancellation of claims 12 and 13 renders their respective rejections moot.

Claims 3 and 4 (and also apparently claim 10) are objected to as being dependent from rejected base claims. The Examiner indicates that the claims contain allowable subject matter and would be allowed if put in independent form incorporating the limitations of the base and intervening claims. The claims are amended in accordance with the Examiner's suggestion and to clarify the subject matter of the present invention. Claim 3 is placed in independent form with claim 4 being dependent therefrom. Claim 10, which has not been substantively rejected herein, is also rewritten in independent form. All Section 112, second paragraph issues have also been corrected, as discussed above. Therefore, it too is believed by applicants to be in condition for allowance. Reconsideration of the objection and allowance of claims 3, 4 and 10 are respectfully requested.

Two (2) further independent claims in excess of three are added. Accordingly, please charge the fee of $220 to Deposit Account No. 10-1250.

The USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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enc: Replacement sheets including of Figs. 4A, 11 and 12.